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A NEW SPECIES OF THE ENDEMIC SOUTH AMERICAN GENUS *AEGLA* FROM PARANÁ, BRAZIL (CRUSTACEA: ANOMURA: AEGLIDAE)

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Abstract.—The genus *Aegla* is widely distributed in streams, lakes, and salt marshes of temperate South America: Argentina, Bolivia, Brazil, Chile, Paraguay, and Uruguay (Schmitt, 1942; Bahamonde and Lopez, 1961). Currently there are 34 recognized species and subspecies of the genus, seven species having been described recently (Hebling and Rodrigues, 1977; Buckup and Rossi, 1977).

Shortly prior to his death, Dr. Waldo L. Schmitt asked if I would be interested in conducting a study of a collection of aeglids that he had amassed anticipating the preparation of a revision of his earlier monograph. Among the specimens lent to me were two lots containing representatives of the species described below that had been donated to the Smithsonian by Dr. Paulo Sawaya, Departmento de Zoologia, Universidade de São Paulo.

Aegla schmitti sp. nov.
(Figs. 1–2)

Description.—Moderately large species, attaining carapace length up to 38.0 mm (see Table 1).

Carapace slightly convex, front moderately wide. Rostrum variable, from short and lingulate to long and slender, tapering, triangular in cross section, distinctly carinate, ridge-roofed, generally exceeding eyestalk by 1–1.5 times length of cornea; carina extending posteriorly to merge with general surface of carapace at level of protogastric lobes; crest of rostral carina somewhat blunt, supporting 2 rows of corneous scales extending from level of epigastric prominences to anterior extremity of rostrum; scales closely situated and alternating from caudal end of rows to slightly anterior to level of posterior margin of orbits where forming single irregular row continuing to apex of rostrum. Rostrum sometimes slightly dorsally inclined at apex (Fig. 2*f*), but usually straight. Subrostral process (Fig. 2*f*) pronounced, conical, directed ventrally or anteroventrally.

Epigastric prominences generally low, with few small scales on summit; anterior margin of protogastric lobes only slightly raised yet furnished with one or more small distinct corneous scales. Areola somewhat variable but generally long and narrow, widening near posterior margin; lateral sutures of cardiac area converging posteriorly.

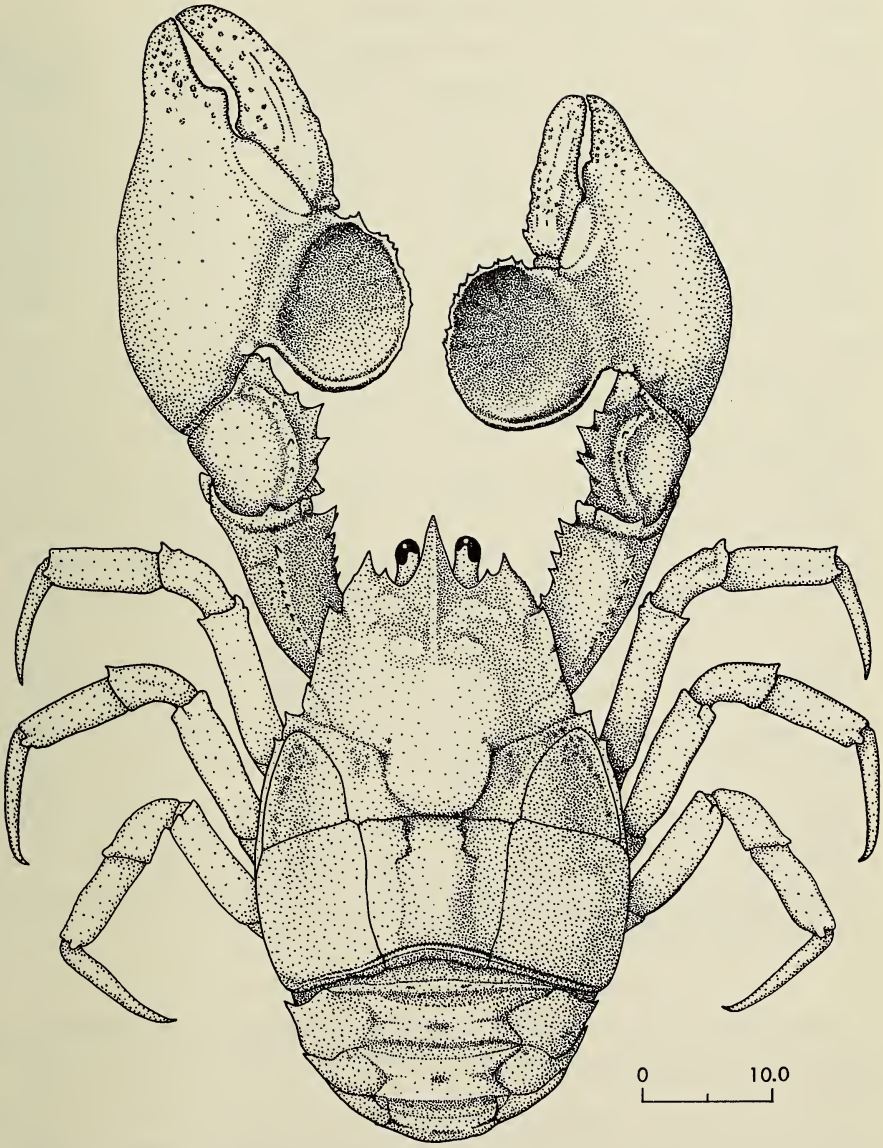


Fig. 1. *Aegla schmitti*, holotypic male (scale in mm).

Orbits moderately wide and deep, orbital spines prominent and separated from acute anterolateral spine by small to moderately wide (less than one-half width of orbital sinus) extraorbital sinus.

Anterolateral spine of carapace acuminate, reaching at least midlength

Table 1. Measurements (mm) of *Aegla schmitti*.

	Holotype	Male paratypes Range	(N = 21) Mean	Female paratype
Carapace				
Total length (CL)	31.4	25.8–38.0	31.8	24.8
Postorbital length (PCL)	26.7	21.3–30.9	26.2	20.3
Width (WC)	26.9	20.8–30.7	26.3	20.0
Length of rostrum (R)	5.0	4.4–11.9	6.2	4.6
Width of front (F)	9.4	7.8–11.7	9.9	7.7
Distance between orbital spines (D)	7.0	5.7– 8.2	7.2	5.9
Chelae				
Palm width (WP)				
Right	20.9	13.0–23.0	17.3	–
Left	21.0	12.2–21.6	15.8	–
Palm length (LP)				
Right	22.3	15.3–28.5	20.7	–
Left	27.7	17.0–32.1	22.0	–
Palm thickness (TP)				
Right	6.7	5.1–10.7	7.2	–
Left	8.9	5.3–11.3	7.9	–
Ratios				
CL/R	6.3	3.2–7.4	5.1	5.4
PCL/R	5.3	2.6–6.4	4.2	4.4
CL/WC	1.2	1.0–1.5	1.2	1.2
OS = D/2	3.5	2.8–4.1	3.6	3.0
EOS = (F-D)/2	1.2	0.8–1.9	1.4	0.9
OS/EOS	2.9	1.9–3.9	2.6	3.3
WC/F	2.9	2.2–3.1	2.7	2.6
LP/WP*	1.1	1.0–1.3	1.2	–
LP/TP**	3.3	2.0–4.9	2.9	–

* Cheliped with larger expanded palmar lobe.
** Larger of two chelipeds.

of cornea and commonly beyond. Anterolateral angle of first hepatic lobe acutely spined; second and third lobes plainly indicated but lacking distinct spines.

Chela broadly ovate and inflated; large chela with palm thick and swollen toward lateral margin. Movable finger with definite lobe on proximomesial margin, often supporting short spines or tubercles, additional ones extending distally along mesial border (Figs. 2*d*, *e*, *h*, *j*). Mesial margin of palm with extremely well developed, conspicuous, dorsally excavate, subdisciform lobe on one, and occasionally both chelae; margin of lobe distinctly cristiform upturned, or at least serrate, and furnished with small spines and scales (Fig. 1).

Carpus of first pereiopod with ridge dorsal to spined mesial margin well developed and bearing 4–9 conical tubercles (often acute conical spines) raised to or above general level of carpus; distomesial lobe of carpus broadly conical, with single small coreous spine situated near apex; ventral surface armed with 1, sometimes as many as 4, acute, conical spines. Merus with longitudinal row of moderately stout to slender spines dorsally (6–13), that situated on distal margin or that immediately proximal to it largest; remaining spines somewhat evenly spaced and regressing in size proximally; anterolateral lobe of merus with single small spine ventrally; ventral surface usually with 4 spines on mesial and 1 or 2 on lateral border. Ischium with single, well developed spine or tubercle on dorsal surface; mesial margin of ventral surface (Fig. 2*b*) with 3–5 spines, distalmost largest. Distal end of merus of second, third, and fourth pereiopods usually with small spinule (sometimes lacking, often 2) ventrolaterally.

Anteroventral angle of epimeron of second abdominal somite (Fig. 2*g*) armed with spine; posteroventral angle rounded; lateral border straight, or at most only slightly concave.

Sternal plate (Fig. 2*i*) between chelipeds with anterolateral angles produced; anteriormost part of sternite terminating in 2, sometimes one, corneous spinule.

Pubescence weak: setae virtually lacking on dorsal side of carapace, abdomen and chelae, unevenly and sparsely placed on ventral surface of latter; setae moderate on gnathal appendages, second, third, and fourth pereiopods and sternites; telson, uropods and epimera margined with closely spaced setae.

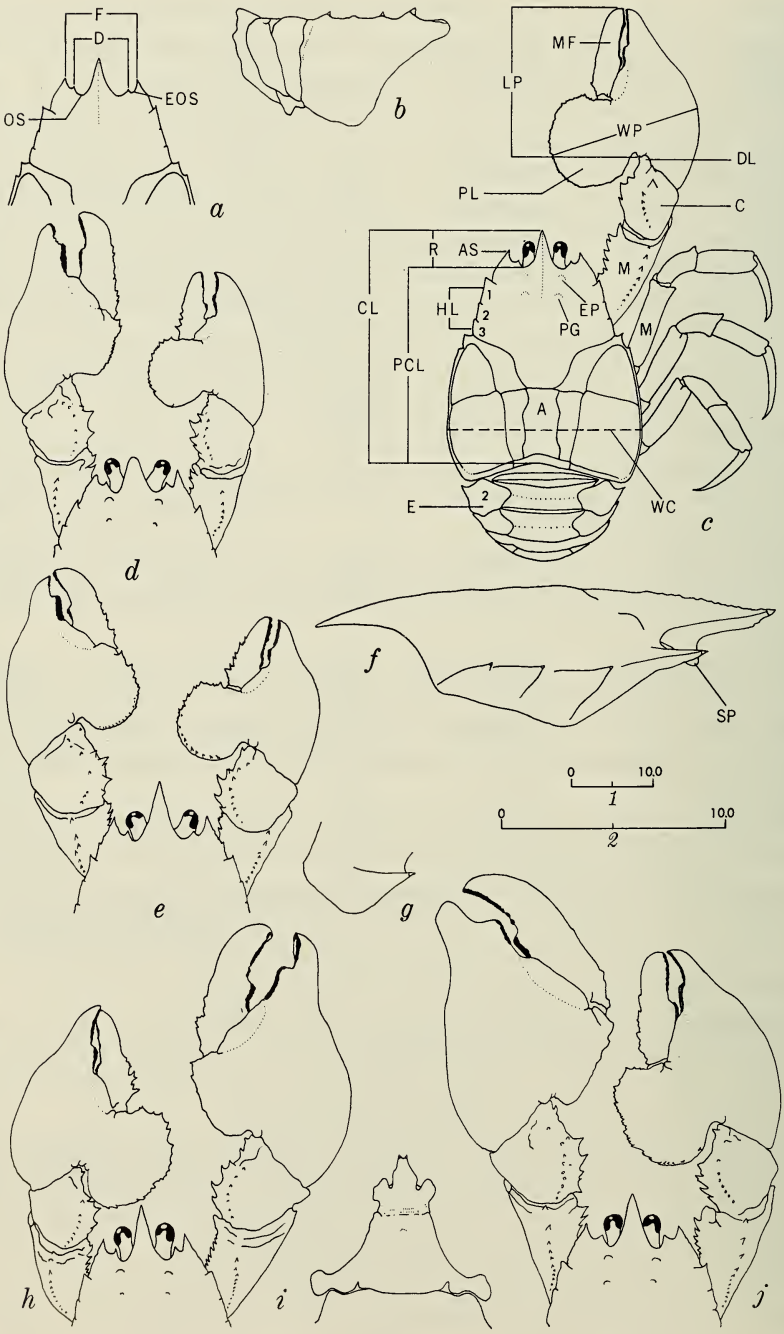
Disposition of types.—The male holotype (USNM 171276), 19 paratypic males and a single paratypic ovigerous female are deposited in the National Museum of Natural History (Smithsonian Institution). One male paratype is housed in the Museu de Ciências Naturais da Fundação Zoo-Botânica do Estado do Rio Grande do Sul, Porto Alegre, Brazil and a paratypic male is deposited in the Museu Nacional, Rio de Janeiro, Brazil.

Type-locality.—"Da dazenda Natal Cecone" (ranch of Mr. Natal Cecone), Curitiba, Brazil (no other data available).

Range.—This species is known from the type-locality and from Rio Bariguy, on the outskirts of Curitiba, Paraná, Brazil.

Size.—The largest specimen examined is a male with a carapace length of 38.0 mm (postorbital carapace length 30.9 mm). The smallest specimen examined is the lone female (ovigerous) (without chelae) having a carapace length of 24.8 mm (postorbital carapace length 20.3 mm).

Table 1 summarizes measurements obtained from the 23 specimens examined. Ringulet (1948) indicated the worth of working with numerical values to show relationships; the following ratios are listed in the table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(see Figs. 2*a*, *c*): CL/R, PCL/R, CL/W, OS(=D/2), EOS(=(F − D)/2), OS/EOS, WC/F, LP/WP, LP/TP.

Life history.—The date of the collection from Rio Bariguy is unknown; however, specimens from the type-locality were collected on 29 April 1943. Among the latter was a female carrying more than 200 eggs (see above), each approximately 1 mm in diameter.

Variation.—Like all aeglids, *A. schmitti* is quite variable. Of 18 males having both chelae, 14 possessed enlarged *left* chelae, 11 supported an expanded palmar lobe on the *right* chelae, and 5 exhibited enlarged lobes on both. Thus, the males of *A. schmitti* generally possess chelae and palmar lobes of unequal size; *left* chelae significantly larger ($P > 0.05$) than right and *right* palmar lobe significantly larger and more deeply excavate ($P > 0.05$) than left; this is consistent for specimens examined from both populations (Figs. 1 and 2*d*, *e*, *h*, *j*; Fig. 2*h* shows one of few specimens with large right chela and expanded left palmar lobe).

Relationships.—Due to the extremely broad and deeply excavate palmar lobe, this species is quite distinct from any other species of the genus *Aegla* (see Fig. 1).

Aegla schmitti has its closest affinities with *A. castro* Schmitt, and also with *A. o. odebrechtii* Müller and *A. o. paulensis* Schmitt; however, *A. schmitti* is a much larger animal than its relatives. These species share an enlarged, expanded, and noticeably excavate palmar lobe that is clearly most well developed in *A. schmitti.* This aeglid differs from *A. o. odebrechtii* and *A. o. paulensis* in that the anterodorsal angle of the epimeron of the second abdominal somite in the latter two species is rounded and not produced in a spine as it is in the former. In addition to attaining a larger size and possessing a more prominent palmar lobe on cheliped, it differs from *A. castro* in that the spine on the distomesial lobe of the carpus is distinctly smaller.

Symbionts.—The only symbionts observed on this aeglid are turbellarians

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Fig. 2. *Aegla schmitti*: *a*, Dorsal view of anterior region of carapace; *b*, Ventral view of ischium of left cheliped of holotype; *c*, Dorsal view illustrating terms and measurements used in species description; *d*, *e*, *h*, *j*, Anterior region and chelipeds of male paratypes showing variations; *f*, Lateral view of carapace of holotype; *g*, Lateral view of second abdominal epimeron of holotype; *i*, Sternum of third and fourth thoracic somites of holotype. *A*, areola; *AS*, anterolateral spine; *C*, carpus; *CL*, total carapace length; *D*, distance between orbital spines; *DL*, distomesial lobe of carpus; *E*, epimeron; *EOS*, extraorbital sinus; *EP*, epigastric prominence; *F*, "front," distance between anterolateral spines; *HL*, hepatic lobes; *LP*, length of palm; *M*, merus; *MF*, movable finger; *OS*, orbital sinus; *PCL*, postorbital carapace length; *PG*, protogastric lobe; *PL*, palmar lobe; *R*, length of rostrum; *SP*, subrostral process; *WC*, width of carapace; *WP*, width of palm. Scale in mm; scale *1*: *d*, *e*, *h*, *j*; scale *2*: *b*, *f*, *g*, *i*.

belonging to the genus *Temnocephala*, although, based on Dioni's (1967) observations, numerous other organisms most assuredly contribute to the epizootic community. Many egg cases of worms are found scattered over the exoskeleton, being particularly abundant around the eyestalks, antennae, suborbital process, sternal plate, and ventral side of the abdomen.

Etymology.—I am pleased to name this species in honor of the late Dr. Schmitt who contributed greatly to our knowledge of these unique fresh-water crustaceans and who initiated me to a study of the aeglids.

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